

Claims

I/We claim:

1. A fuel delivery staging device operatively associated with a fuel cell having an anode with an exposed surface and a fuel flow containment plate positioned above the exposed anode surface, wherein a flow of fuel is provided laterally between the exposed anode surface and the fuel flow containment plate, the device comprising:

a unitary, essentially flat staging plate for diverting a portion of the flow of fuel to a downstream area of the exposed surface of the anode, wherein the staging plate is positioned between the exposed anode surface and the fuel flow containment plate and oriented essentially parallel to the exposed anode surface, the staging plate also being capable of conducting electricity generated by the fuel cell; and

an anode chamber, defined by the exposed surface of the anode on one side and either the staging plate or the containment plate on an opposite side, wherein the anode chamber is configured to permit a continuous, unobstructed flow of fuel across an upstream area and the downstream area of the exposed anode surface.

2. A device as set forth in claim 1, wherein the staging plate includes at least one aperture.

3. A device as set forth in claim 2, wherein the aperture has a shape selected from the group consisting of: rectangles, triangles, straight-sided polygons, circles, ovals and polygons having at least one curved side.

4. A device as set forth in claim 1, wherein the staging plate is constructed from a material selected from the group consisting of: a high temperature metal and LaCrO_3 type ceramic.

5. A device as set forth in claim 1, wherein the staging plate includes filled vias for the conduction of electricity.

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6. A device as set forth in claim 1, further comprising a second staging plate for diverting a second portion of the flow of fuel to a second downstream area of the exposed anode surface, wherein the second staging plate is positioned between the essentially flat staging plate and the fuel flow containment plate, the second staging plate also being capable of conducting electricity generated by the fuel cell.

7. A device as set forth in claim 6, wherein at least one of the staging plates include at least one aperture.

8. A device as set forth in claim 7, wherein the aperture has a shape selected from the group consisting of: rectangles, triangles, straight-sided polygons, circles, ovals and polygons having at least one curved side.

9. A device as set forth in claim 6, wherein at least one of the staging plates include filled vias for the conduction of electricity.

10. A device as set forth in claim 6, wherein the staging plate is constructed from a material selected from the group consisting of: a high temperature metal and LaCrO_3 type ceramic.

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